DIO-3232
DIGITAL I/O CARD

USER’S MANUAL (V1.2)

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1. FORWARD

Thank you for your selection of JAC's product DIO-3232 32 inputs and 32 outputs DIGITAL I/O card for IBM compatible industrial PC. In the field of industrial control, digital I/O is generally controlled under a microprocessor and owing to their specific consideration of industrial environment, it is quite different from the laboratory requirement.

This card is a FPGA based design and our experience in the noise immunity makes this card very stable in the noisy environment and you don't worry about computer down by external noise. we wish the card that will be helpful to your project.

Other DIO series products:
DIO-9201→16IN+16OUT digital I/O card
DIO-2232→32IN+32OUT digital I/O card (ISA bus)
DIO-2248→48IN+16OUT digital I/O card (ISA bus)
DIO-2264→64IN digital Input card (ISA bus)
DIO-3248→48IN+16OUT digital I/O card (PCI bus)
DIO-3264→64IN digital Input card (PCI bus)

Any comment is welcome,
please visit our website: www.automation.com.tw for the up to date information.

2. PACKING LIST

2.1	DIO-3232 main card	1
2.2	DIO-3232 DIN rail mounted wiring board	1
2.3	SCSI II 68 PINCABLE(1.5m)	1
2.4	Accessories	1
2.5	DEMO CD	1

3. FEATURES

3.1 PCI plug and play function with card ID for 16 identical cards
3.2 All of inputs and outputs are photo-coupler isolated
3.3 Build-in input de-bounce circuit
3.4 LEDs for corresponding status indication
3.5 8 digits per I/O group with Green LED at first digit
3.6 Power MOS type output for high speed DC load

4. SPECIFICATIONS

4.1 DIO-3232 MAIN CARD

4.1.1 Input photo-coupler isolation voltage — 2500Vac 1Min

4.1.2 Insulation resistance — 100M Ohm (min) at 1000Vdc

4.1.3 PCI bus data width — 32 bits

4.1.4 Card ID — 4 bits

4.1.5 Switching speed — 2.2KHZ max. (with on board debounce circuit)

4.1.6 Input “ON” state — 2.8V(max) 4.5ma(min)

4.1.7 Input “OFF” state — 8V(min) 3ma(max)

4.1.8 Output channel — 32 ea of ON/OFF switching

4.1.9 I/O connector — 68 pin female mini scsi connector

4.1.10 Wiring board — 1 with round cable hook to main card

4.1.11 External supply — DC 24± 4V

4.1.12 Operation temperature — 0 to 70° C

4.1.13 Operation humidity — RH5~95%, non-condensed

4.1.14 Dimension — 176(W)*122(H)mm

4.2 DIO-3232 DIN RAIL MOUNTED WIRING BOARD

4.2.1 External supply —DC 24V± 4V

4.2.2 Input status indicator — 32 LED, 8 digit per group with Green LED at first digit

4.2.3 Output status indicator — 32 LED, 8 digit per group with Green LED at first digit

4.2.4 Power indicator — Red LED

4.2.5 Terminal — every 4 has one common terminal.
(Different “common” for different positive power terminal)

4.2.6 Output capacity —POWER MOS output, 1A continuous、120V DC (N MOS max) 、24V DC (P MOS max)

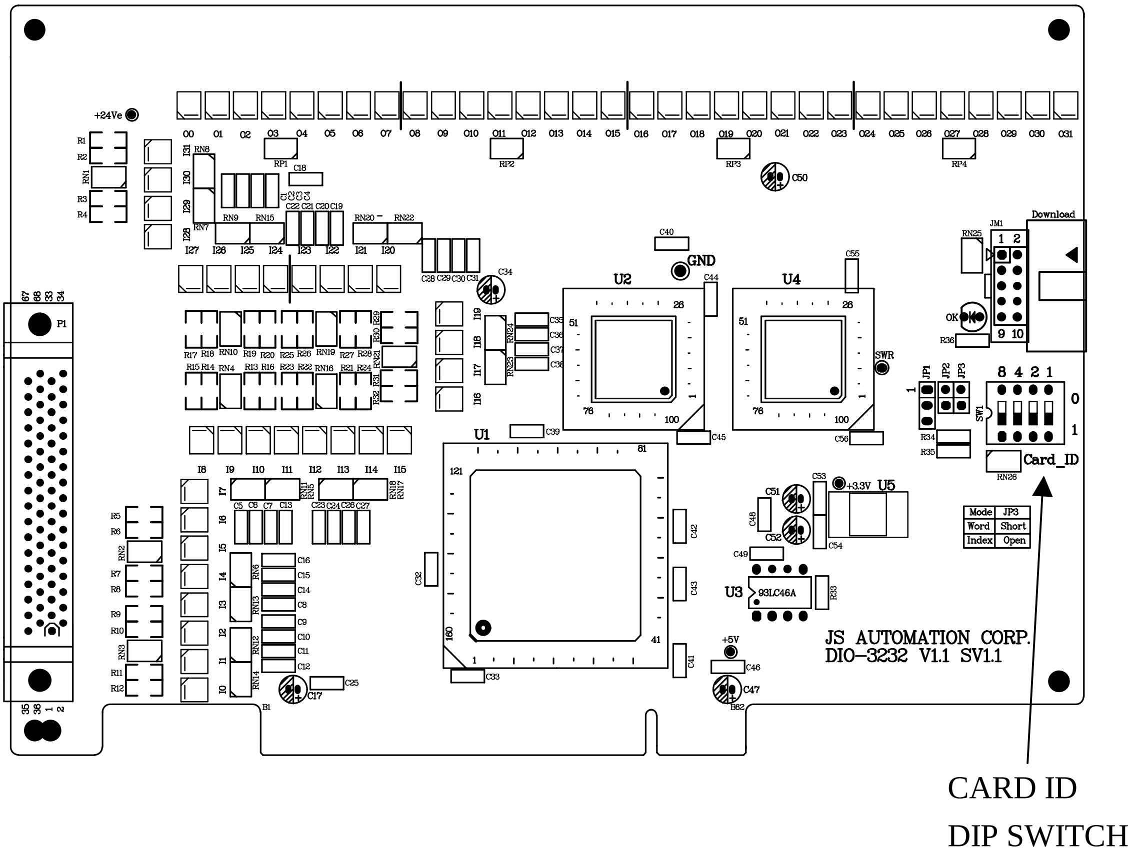
4.2.7 Operation temperature — 0 to 70° C

4.2.8 Operation humidity — RH5~95%, non-condensed

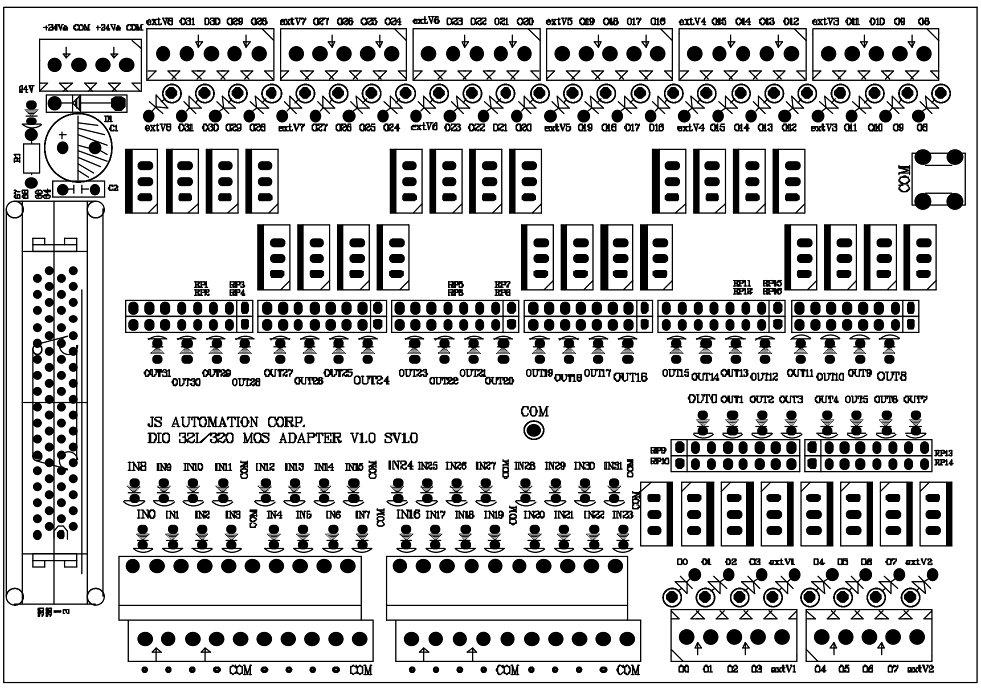
4.2.9 Dimension — 155(W)*107(H)mm

5. LAYOUT

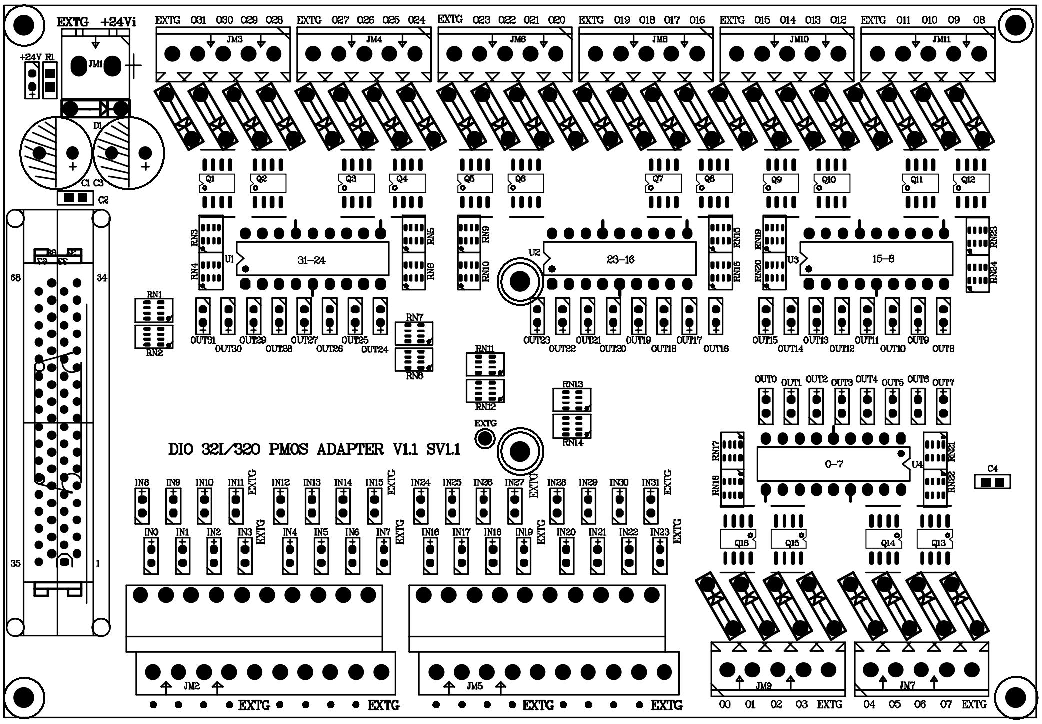
5.1 DIO-3232 MAIN CARD LAYOUT



5.2 DIO-3232 WIRING BOARD LAYOUT (N MOS)

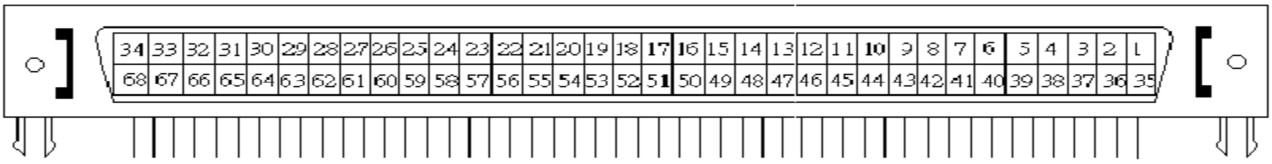


5.3 DIO-3232 WIRING BOARD LAYOUT (P MOS)



6. PIN DEFINITIONS

6.1 FRONT VIEW OF CONNECTOR

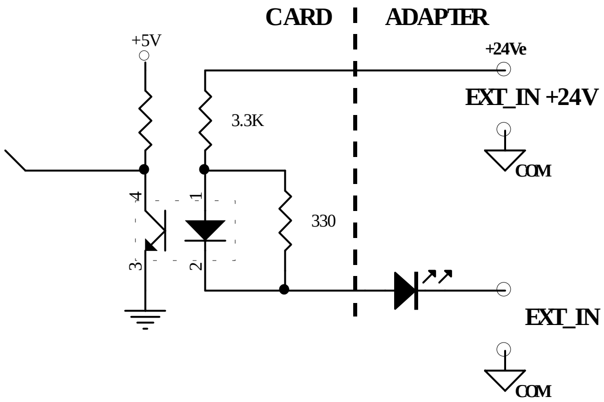


6.2 PIN DEFINITIONS

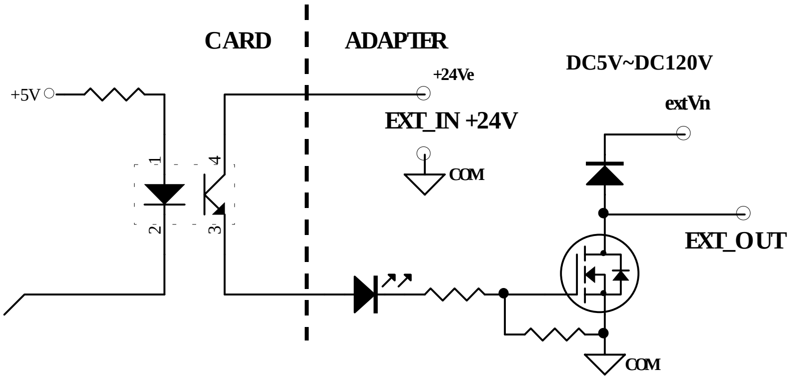
PIN	Descriptions	PIN	Descriptions
1	EXT_IN0 [External Input 0]	35	EXT_IN1 [External Input 1]
2	EXT_IN2 [External Input 2]	36	EXT_IN3 [External Input 3]
3	EXT_IN4 [External Input 4]	37	EXT_IN5 [External Input 5]
4	EXT_IN6 [External Input 6]	38	EXT_IN7 [External Input 7]
5	EXT_IN8 [External Input 8]	39	EXT_IN9 [External Input 9]
6	EXT_IN10 [External Input 10]	40	EXT_IN11 [External Input 11]
7	EXT_IN12 [External Input 12]	41	EXT_IN13 [External Input 13]
8	EXT_IN14 [External Input 14]	42	EXT_IN15 [External Input 15]
9	EXT_IN16 [External Input 16]	43	EXT_IN17 [External Input 17]
10	EXT_IN18 [External Input 18]	44	EXT_IN19 [External Input 19]
11	EXT_IN20 [External Input 20]	45	EXT_IN21 [External Input 21]
12	EXT_IN22 [External Input 22]	46	EXT_IN23 [External Input 23]
13	EXT_IN24 [External Input 24]	47	EXT_IN25 [External Input 25]
14	EXT_IN26 [External Input 26]	48	EXT_IN27 [External Input 27]
15	EXT_IN28 [External Input 28]	49	EXT_IN29 [External Input 29]
16	EXT_IN30 [External Input 30]	50	EXT_IN31 [External Input 31]
17	EXT_OUT0 [External Output 0]	51	EXT_OUT1 [External Output 1]
18	EXT_OUT2 [External Output 2]	52	EXT_OUT3 [External Output 3]
19	EXT_OUT4 [External Output 4]	53	EXT_OUT5 [External Output 5]
20	EXT_OUT6 [External Output 6]	54	EXT_OUT7 [External Output 7]
21	EXT_OUT8 [External Output 8]	55	EXT_OUT9 [External Output 9]
22	EXT_OUT10 [External Output 10]	56	EXT_OUT11 [External Output 11]
23	EXT_OUT12 [External Output 12]	57	EXT_OUT13 [External Output 13]
24	EXT_OUT14 [External Output 14]	58	EXT_OUT15 [External Output 15]
25	EXT_OUT16 [External Output 16]	59	EXT_OUT17 [External Output 17]
26	EXT_OUT18 [External Output 18]	60	EXT_OUT19 [External Output 19]
27	EXT_OUT20 [External Output 20]	61	EXT_OUT21 [External Output 21]
28	EXT_OUT22 [External Output 22]	62	EXT_OUT23 [External Output 23]
29	EXT_OUT24 [External Output 24]	63	EXT_OUT25 [External Output 25]
30	EXT_OUT26 [External Output 26]	64	EXT_OUT27 [External Output 27]
31	EXT_OUT28 [External Output 28]	65	EXT_OUT29 [External Output 29]
32	EXT_OUT30 [External Output 30]	66	EXT_OUT31 [External Output 31]
33	+24V [External DC24V power]	67	+24V [External DC24V power]
34	+24V [External DC24V power]	68	+24V [External DC24V power]

7. I/O INTERFACE DIAGRAM

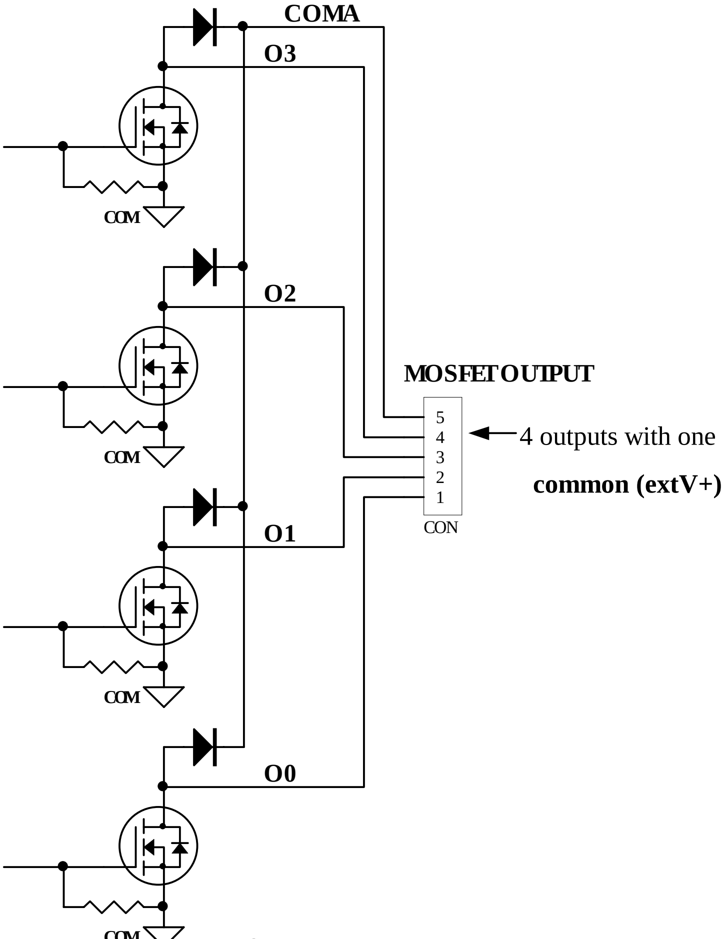
7.1 INPUT DIAGRAM



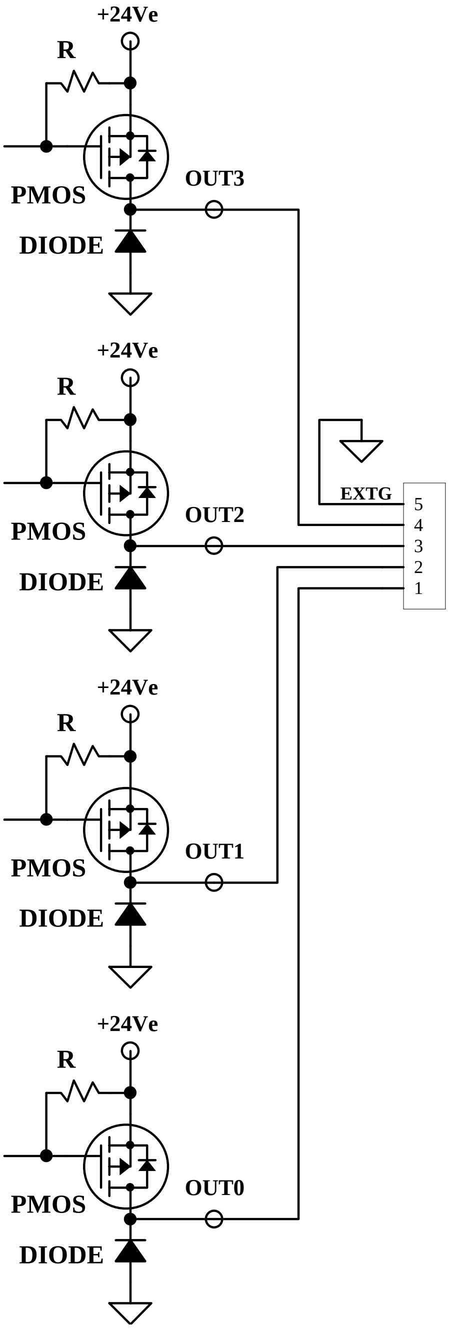
7.2 OUTPUT DIAGRAM



7.3 WIRING BOARD OUTPUT DIAGRAM(N MOS)

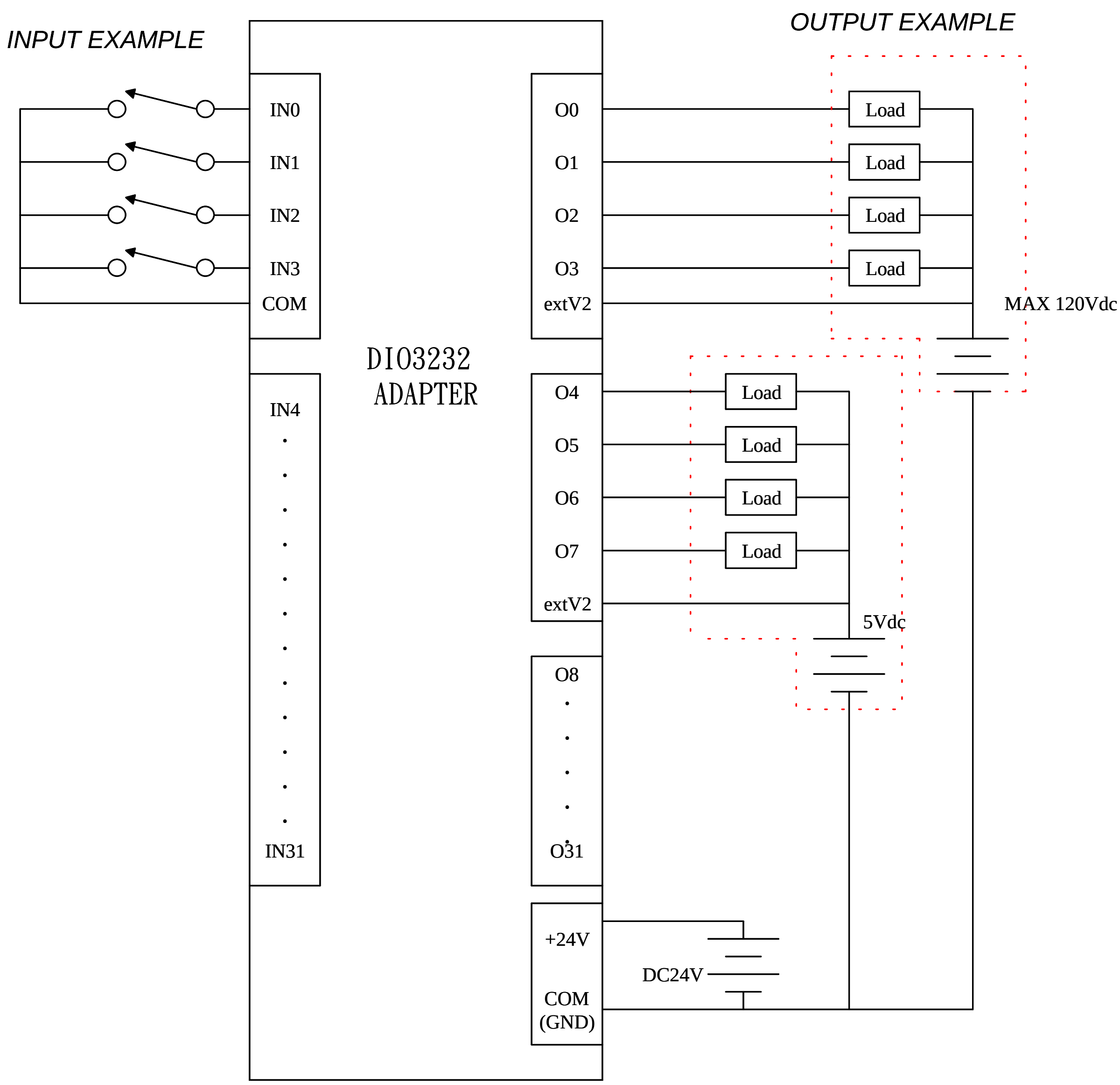


7.4 WIRING BOARD OUTPUT DIAGRAM(P MOS)



8. EXTERNAL WIRING DIAGRAM

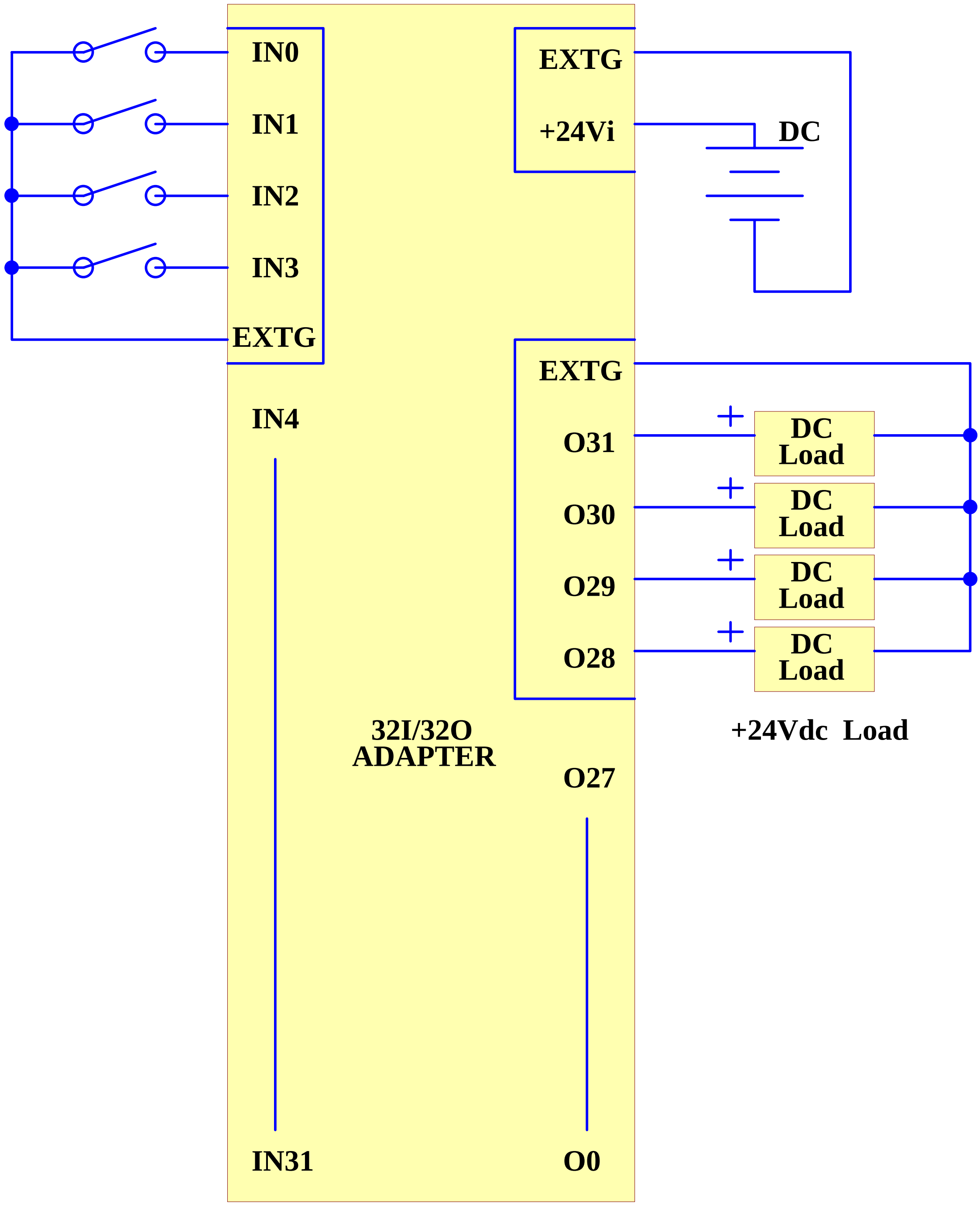
8.1 EXTERNAL WIRING DIAGRAM (N MOS)



※ If different group of output use different voltage source, please make sure to connect the V- together to the ground of external DC24V power supply.

8.2 EXTERNAL WIRING DIAGRAM(P MOS)

INPUT EXAMPLE **OUTPUT EXAMPLE**

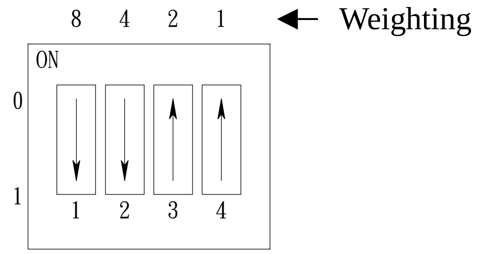


9. HARDWARE SETTINGS

9.1 Card ID setting

Since PCI cards have plug and play function, the card ID is required for programmer to identify which card he/she will control without knowing the physical address assigned by the Windows. A 4 bits DIP switch for distinguishing the 16 identical card. The following example sets the card ID at 12.

DIP SW SETTING：(ID=12)



10. APPLICATIONS

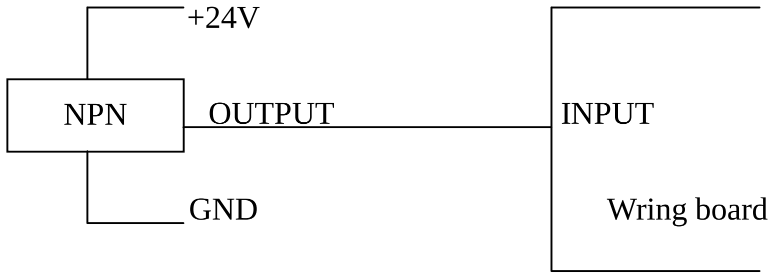
10.1 Accept：- P.B./M.S./EMG./Contact- Start/Stop/Limit swith/sensor
- Interlock/selective Sw.- Proximity switch
- Aux. contact of transducer/detector

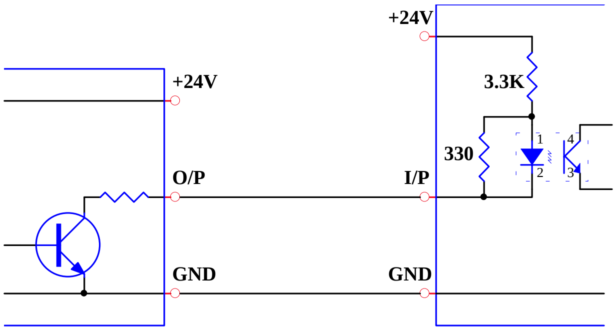
10.2 As I/O of S/W PLC Controller
Power MOS type output: drive high speed DC load

11. APPLICATION NOTE

11.1 Tip for using NPN type proximity S/W：

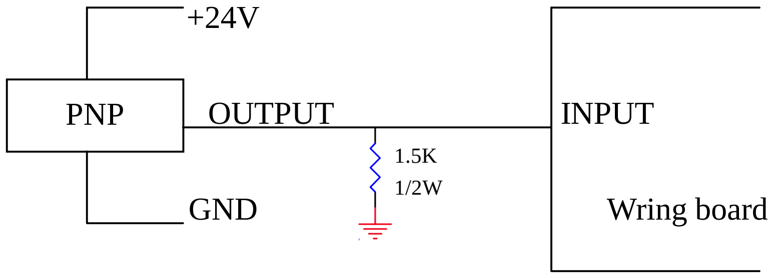
The NPN type proximity sensor can directly connect to input of wring board.

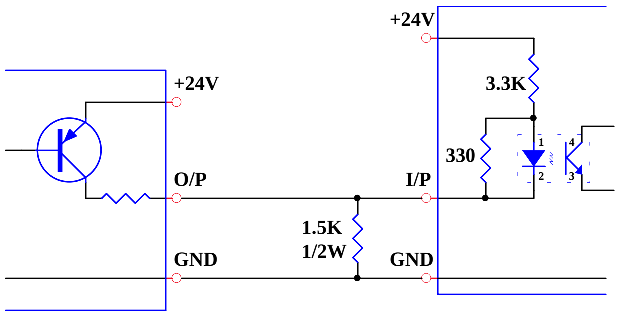




11.2 Tip for using PNP type proximity S/W：

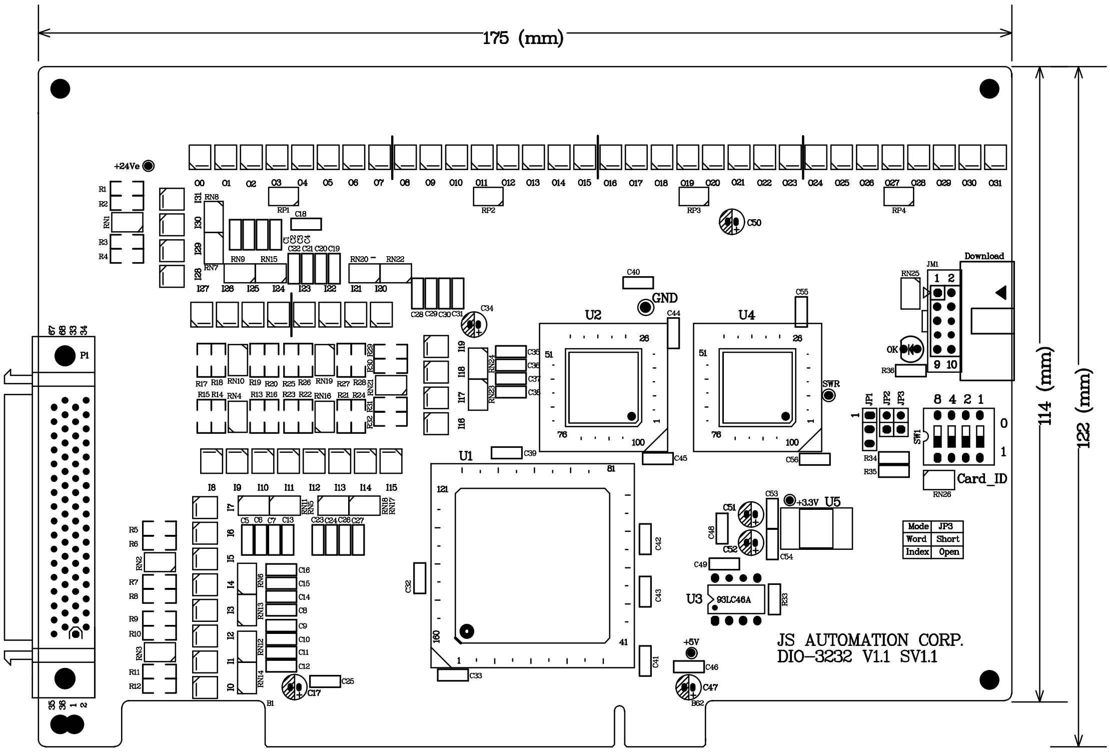
The PNP type proximity sensor need extra pull down resister connect to input of wring board.



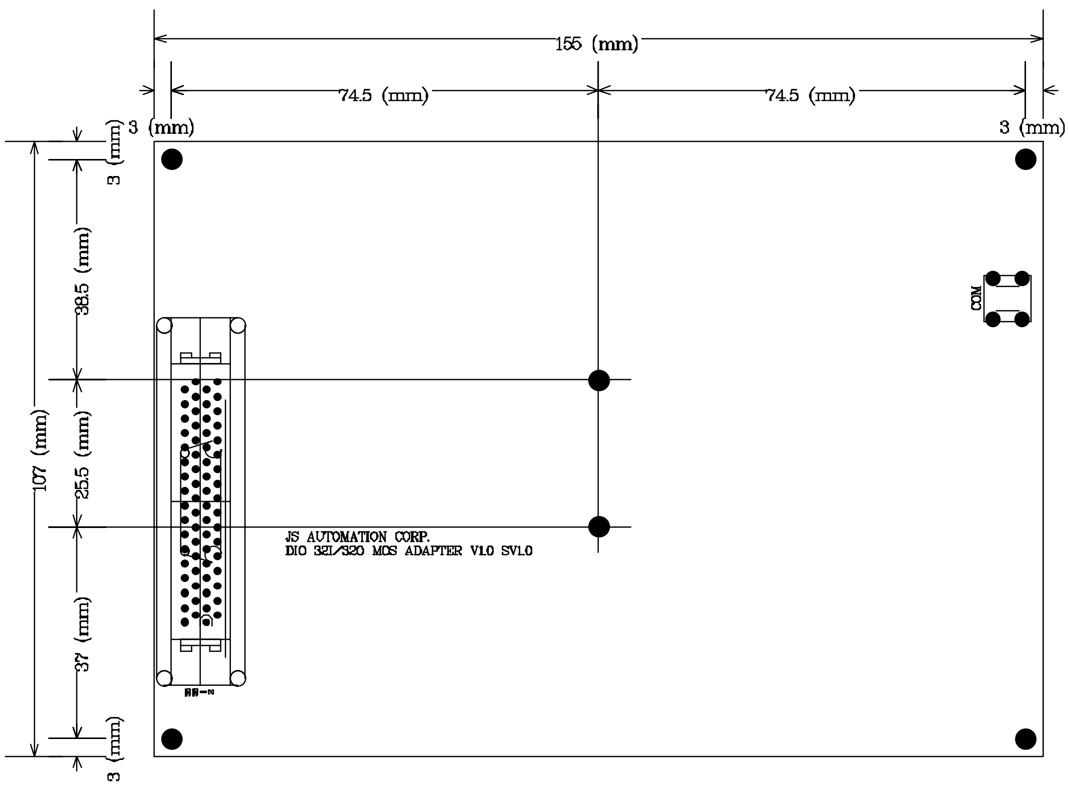


12. DIMENSIONS

12.1 DIO-3232 MAIN CARD DIMENSION



12.2 DIO-3232 WIRING BOARD DIMENSION



13. ORDER INFORMATION

PRODUCT	DESCRIPTIONS
DIO-3232	Main card: 32 In and 32 Out with photo-coupler isolated
DIO-3232 DMO	Demo program of DIO-3232 card for DOS (free with user manual)
DIO-3232 WIN	Dll (VB/VC/C++ Builder) of DIO-3232 card for Win95/98/NT
DIO-3232 LBV	Vi of DIO-3232 card for LabVIEW i
DIO-3232 DIN	DIN rail mounted wiring board for 32 input and 32 output